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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/830,188	04/21/2004	Ryan Lane	020378D1	7730
23696	7590	11/03/2005		EXAMINER
QUALCOMM, INC 5775 MOREHOUSE DR. SAN DIEGO, CA 92121				PERKINS, PAMELA E
			ART UNIT	PAPER NUMBER
			2822	

DATE MAILED: 11/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/830,188	LANE ET AL.	
	Examiner	Art Unit	
	Pamela E. Perkins	2822	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 04 May 2005.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-12 and 14 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-12 and 14 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_
- 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.  
 5) Notice of Informal Patent Application (PTO-152)  
 6) Other: \_\_\_\_\_.

## DETAILED ACTION

This office action is in response to the filing of amendment on 4 May 2005.

Claims 1-12 and 14 are pending; claims 13 and 15 have been cancelled.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Torres et al. (5,898,213) in view of Lin et al. (5,468,999).  
Torres et al. disclose a method of making a semiconductor package where a substrate (95) has a die (96) mounted at a die attach area; the die (96) has a plurality of bond pads (97); bond pad islands (98) are located on the substrate (95); bond wire (99) connects the bond pad (97) to the bond island (98); the bond pad island (98) is connected to a conductive terminal pad (102) by trace (101) (Fig. 7; col. 5, lines 1- 27).  
Torres et al. further disclose encapsulating the die (col. 6, lines 56-67). Torres et al. also disclose the package lead comprises a solder ball included in a ball grid array (BGA) (col. 1, lines 1-2) or a land included in a land grid array (LGA) (col. 5, lines 40-48).  
Torres et al. do not disclose connecting a plurality of solder balls to the at least one bond island, wherein at least one redundant solder ball is used to form a path for the inner solder balls connected to bond islands to be electrically plated.

Lin et al. disclose a method of making a semiconductor package where a substrate (14/16) has a die (12) mounted at a die attach area; bond wire (28) connecting the die (12) and the substrate (14/16); a conductive terminal pad (20) (col. 4, line 44 thru col. 5, line 24). Lin et al. further disclose connecting a plurality of solder balls (34), the plurality of solder balls being located inwardly from an edge of the substrate (14/16), wherein at least one redundant solder ball (34) is used to form a path for the inner solder balls connected to be electrically plated (col. 4, lines 55-64).

Since Torres et al. and Lin et al. are both from the same field of endeavor, a method of making a semiconductor package, the purpose disclosed by Lin et al. would have been recognized in the pertinent art of Torres et al. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Torres et al. by connecting a plurality of solder balls, the plurality of solder balls being located inwardly from an edge of the substrate, wherein at least one redundant solder ball is used to form a path for the inner solder balls connected to be electrically plated as taught by Lin et al. to increase the number of input/output terminals with causing electrical shorts and without increasing the size of the package (col. 1, line 57 thru col. 2, line 6).

Claims 6-10 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Torres et al. in view of Lin et al. as applied to claim 1 above, and further in view of Chou et al. (5,691,568).

Torres et al. in view of Lin et al. disclose the subject matter claimed above except a bond finger for coupling a bond wire between a bond finger and a bond pad.

Chou et al. disclose a method of making a semiconductor package where a package comprises a bond finger (511) for coupling a bond wire (526b) between a bond finger and a bond pad on the semiconductor chip (Fig. 5b; col. 10, lines 4-58; col. 12, lines 4-30).

Since Torres et al. and Chou et al. are both from the same field of endeavor, a method of making a semiconductor package, the purpose disclosed by Chou et al. would have been recognized in the pertinent art of Torres et al. Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to modify Torres et al. by forming a bond finger for coupling a bond wire between a bond finger and a bond pad as taught by Chou et al. to minimize false switching (col. 5, lines 22-45).

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

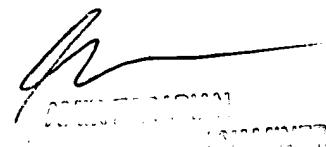
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pamela E. Perkins whose telephone number is (571) 272-1840. The examiner can normally be reached on Monday thru Friday, 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on (571) 272-1852. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PEP



A handwritten signature in black ink, appearing to be "J. H. [Signature]". Below the signature is a rectangular stamp with the text "SEARCHED 10/20/2001" and "INDEXED 10/20/2001".